

94



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,918	10/21/2003	Michael M. Klock	NVID-061/00US	6921
23419	7590	02/23/2005	EXAMINER	
COOLEY GODWARD, LLP			HADIDI, JON	
3000 EL CAMINO REAL			ART UNIT	
5 PALO ALTO SQUARE			PAPER NUMBER	
PALO ALTO, CA 94306			2672	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/690,918	Applicant(s) KLOCK ET AL.	
	Examiner Jon Hadidi	Art Unit 2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on August 16, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>October 21, 2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "the graphical user" in line 1. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction, such as changing "the graphical user" to "the graphical user interface", is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-6, 10-17, and 30-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Bigjakkstaffa, <http://www.sysopt.com/articles/VCOGuide/>.

With regard to claim 1, Bigjakkstaffa describes receiving a user request for overclocking (see Bigjakkstaffa, the overclocking menu tab on page 3, and see page 5,

first paragraph, wherein the user requests overclocking by ticking the checkbox marked "Enable driver level hardware overclocking" near the top of the window); forming sets of overclocking parameters to be evaluated, each set of overclocking parameters having at least one overclocking parameter that is unique and which is associated with at least one of a graphics processor and a graphics memory (see Bigjakkstaffa, pages 5 and 6, wherein the overclocking parameters to be evaluated are the clock of the GPU core and the clock of the GPU memory); for each set of overclocking parameters, applying a stress test, said stress test including executing a graphics test sequence and monitoring graphical performance of said graphics system; and determining a safe set of overclocking parameters passing said stress test (see Bigjakkstaffa, pages 6 and 7, wherein the user clicks on the "test" button, and wherein further tests are performed by running a 3dmark bench, and if no visual artifacts or texture tearing appears, then the user defined GPU core and GPU clock speeds pass the test and are determined to be a safe set of overclocking parameters).

With regard to claim 2, Bigjakkstaffa describes adjusting a clock rate of a clock of said graphics system (see Bigjakkstaffa, pages 5 and 6, wherein the overclocking parameters being adjusted by the user are the clock of the GPU core and the clock of the GPU memory).

With regard to claim 3, Bigjakkstaffa describes adjusting a graphics processor core clock rate (see Bigjakkstaffa, pages 5 and 6, wherein the overclocking parameters being adjusted by the user are the clock of the GPU core and the clock of the GPU memory).

With regard to claim 4, Bigjakkstaffa describes adjusting a graphics memory clock rate (see Bigjakkstaffa, pages 5 and 6, wherein the graphics memory clock rate adjusted is the clock of the GPU memory, or graphics memory).

With regard to claim 5, Bigjakkstaffa describes adjusting at least one clock rate to form at least one new clock rate (see Bigjakkstaffa, page 6, wherein the user adjusts at least one clock rate to form at least one new clock rate by dragging the core clock and memory clock sliders up in 10Mhz increments); and setting at least one of a chip voltage, memory timing, or a fan speed for each said at least one new clock rate (see Bigjakkstaffa, page 6, wherein the memory timing of the GPU memory is inherently set when the memory clock sliders are adjusted).

With regard to claim 6, incrementing a clock rate of said graphics system to form new sets of overclocking parameters; and applying said stress test for each incremental increase in said clock rate; said clock rate incremented until a number of errors associated with said stress test exceeds a preselected number of errors (see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots, then the clock rate is no longer incremented).

With regard to claim 10, Bigjakkstufpa describes selecting a maximum safe clock rate of a graphics processing unit (see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate of a GPU is incrementally increased to form a new set of overclocking

parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots, then the clock rate is no longer incremented, instead, the clock rate is decremented and selected by the user to the last stable clock rate which is the maximum safe GPU clock rate).

With regard to claim 11, Bigjakkstaffa describes selecting a maximum safe clock rate of a graphics memory (see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate of a graphics memory is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots, then the clock rate is no longer incremented, instead, the clock rate is decremented and selected by the user to the last stable clock rate which is the maximum safe memory clock rate).

With regard to claim 12, Bigjakkstaffa describes receiving a user request for overclocking (see Bigjakkstaffa, the overclocking menu tab on page 3, and see page 5, first paragraph, wherein the user requests overclocking by ticking the checkbox marked "Enable driver level hardware overclocking" near the top of the window) of at least one of a graphics processor and a graphics memory (see Bigjakkstaffa, pages 5 and 6, wherein the overclocking parameters to be overclocked are the clock of the GPU core and the clock of the GPU memory); adjusting a clock rate of at least one clock of said

graphics system (see Bigjakkstaffa, pages 5 and 6, wherein the overclocking parameters being adjusted by the user are the clock of the GPU core and the clock of the GPU memory); for each new clock rate, applying a stress test, said stress test including executing a graphics test sequence and monitoring errors generated in response to execution of said graphics test sequence (see Bigjakkstaffa, pages 6 and 7, wherein the user clicks on the “test” button, and wherein further tests are performed by running a 3dmark bench, and if no visual artifacts or texture tearing appears, then the user defined GPU core and GPU clock speeds pass the test and are determined to be a safe set of overclocking parameters); determining a maximum clock rate for each of said at least one clock for which said graphics system has a number of errors below a threshold level; and setting said at least one clock rate at said maximum clock rate(s) (see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots, then the clock rate is no longer incremented, instead, the clock rate is decremented to the last stable clock rate which is the maximum clock rate(s)).

With regard to claim 13, Bigjakkstaffa describes receiving an input from a control panel of a graphical user interface (see Bigjakkstaffa, page 6, wherein the system tweaks control panel, specifically the overclocking tab, receives user input when the user drags the core clock and memory clock sliders).

With regard to claim 14, Bigjakkstaffa describes displaying said graphical user with updated overclocking parameters (see Bigjakkstaffa, page 8, last paragraph, and page 9, wherein the updated overclocking parameters of page 8 are shown by the overclocking control panel on page 9).

With regard to claim 15, Bigjakkstaffa describes incrementing a core clock rate of a graphics processing unit rate (see Bigjakkstaffa, page 6, which describes incrementing a core clock rate of a graphics processing unit by dragging the core clock slider up in 10Mhz increments).

With regard to claim 16, Bigjakkstaffa describes incrementing a memory clock rate of a graphics memory (see Bigjakkstaffa, page 6, which describes incrementing a memory clock rate of a graphics processing unit by dragging the memory clock slider up in 10Mhz increments).

With regard to claim 17, Bigjakkstaffa describes incrementing a first clock rate by a first preselected increase in clock rate (see Bigjakkstaffa, page 6, which describes incrementing a core clock rate of a graphics processing unit by dragging the core clock slider up in preselected 10Mhz increments); and incrementing a second clock rate by a second preselected increase in clock rate (see Bigjakkstaffa, page 6, which describes incrementing a memory clock rate of a graphics processing unit by dragging the memory clock slider up in preselected 10Mhz increments).

With regard to claim 30, Bigjakkstaffa describes means for selecting sets of overclocking parameters to test (see Bigjakkstaffa, page 6, wherein the user adjusts overclocking parameters by dragging the core clock and memory clock sliders up in

10Mhz increments); means for performing a graphical stress test for said sets of overclocking parameters; and means for determining safe overclocking parameters passing said graphical stress test ; wherein said overclocking parameters comprise at least one of a graphics processor core clock rate and a graphics memory clock rate (see Bigjakkstaffa, pages 6 and 7, wherein the user clicks on the “test” button, and wherein further tests are performed by running a 3dmark bench, and if no visual artifacts or texture tearing appears, then the user defined GPU core and GPU clock speeds pass the test and are determined to be a safe set of overclocking parameters).

With regard to claim 31, Bigjakkstaffa describes means for a user to initiate a request to select overclocking parameters (see Bigjakkstaffa, the overclocking menu tab on page 3, and see page 5, first paragraph, wherein the user requests overclocking by ticking the checkbox marked “Enable driver level hardware overclocking” near the top of the window) of at least one of a graphics processor and a graphics memory (see Bigjakkstaffa, pages 5 and 6, wherein the overclocking parameters to be evaluated are the clock of the GPU core and the clock of the GPU memory); means for selecting sets of overclocking parameters to test (see Bigjakkstaffa, page 6, wherein the user adjusts overclocking parameters by dragging the core clock and memory clock sliders up in 10Mhz increments); means for performing a graphical stress test for said sets of overclocking parameters; and means for determining safe overclocking parameters passing said graphical stress test wherein said overclocking parameters comprise at least one of a graphics processor core clock rate and a graphics memory clock rate (see Bigjakkstaffa, pages 6 and 7, wherein the user clicks on the “test” button, and

wherein further tests are performed by running a 3dmark bench, and if no visual artifacts or texture tearing appears, then the user defined GPU core and GPU clock speeds pass the test and are determined to be a safe set of overclocking parameters).

With regard to claim 32, Bigjakkstaffa describes control panel means for displaying maximum safe overclocking parameters (see Bigjakkstaffa, pages 6 and 7, wherein the user clicks on the "test" button, and wherein further tests are performed by running a 3dmark bench, and if no visual artifacts or texture tearing appears, then the user defined GPU core and GPU clock speeds pass the test and are determined to be a safe set of overclocking parameters, and said safe overclocking parameters are displayed on the overclocking tab of the system tweaks control panel at page 9 of Bigjakkstaffa).

3. Claims 7, 9, and 18 are rejected under 35 U.S.C. 102(a) as being unpatentable over Bigjakkstaffa, <http://www.sysopt.com/articles/VCOGuide/> and Gasior, <http://techreport.com/reviews/2002q3/ti4200s/index.x?pg=1>.

With regard to claim 7, Bigjakkstufra is relied upon for describing all of the limitations of parent claim 1, as discussed in the 102(a) rejection above. Bigjakkstufra describes counting pixel errors and incrementing said clock rate comprises incrementing said clock rate until a number of pixel errors exceeds a pre-selected number of pixel errors (see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and

further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots/pixels, then the clock rate is no longer incremented), but fails to explicitly describe a graphics pipeline, as also recited in claim 7. However, Gasior teaches that the GeForce4 Ti 4200 graphics card tested in Bigjakkstaffa inherently has a graphics pipeline (see Gasior, page 1, fourth paragraph).

With regard to claim 9, Bigjakkstuffa describes executing a test program sequence of graphical operations; and determining a number of pixel errors generated by a graphics pipeline of said graphics system; wherein said set of overclocking parameters passes said stress test if said number of pixel errors is no greater than a preselected number of pixel errors (see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots/pixels, then the clock rate is no longer incremented).

With regard to claim 18, Bigjakkstuffa is relied upon for describing all of the limitations of parent claim 17, as discussed in the 102(a) rejection above. Bigjakkstuffa describes counting pixel bit errors (see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and further wherein when the test exceeds a preselected number of errors, in this

Art Unit: 2672

case at least one such as a graphical glitch or a showing of colored dots/pixels, then the clock rate is no longer incremented), but fails to explicitly describe a graphics pipeline, as further recited in claim 18. However, Gasior teaches that the GeForce4 Ti 4200 graphics card tested Bigjakkstaffa inherently has a graphics pipeline (see Gasior, page 1, fourth paragraph)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bigjakkstaffa, <http://www.sysopt.com/articles/VCOGuide/> and Gasior, <http://techreport.com/reviews/2002q3/ti4200s/index.x?pg=1>, in view of Catenary Systems, <http://www.catenary.com/howto/compare.html>.

With regard to claim 8, Bigjakkstaffa and Gasior are relied upon for describing all of the limitations of parent claim 7, as discussed in the 102(a) rejection above. Bigjakkstaffa and Gasior fail to explicitly describe writing to a three dimensional surface; performing an exclusive or operation; and determining uniformity, as recited in claim 8. However, official notice is hereby taken that writing to a three dimensional surface is

notoriously well known in the art, and Catenary teaches performing an exclusive or operation and determining uniformity (see Catenary, page 1, wherein an XOR operation is performed on two images to determine their similarities or uniformity and differences).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstaffa to incorporate the XOR operations and uniformity determination of Catenary Systems, because XORing two images generated by the graphics stress test of Bigjakkstaffa allows one to determine when the frequency of the GPU is set too high, as, for example, when two 3D generated test images are determined to be non-uniform by a predetermined percentage.

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bigjakkstaffa, <http://www.sysopt.com/articles/VCOGuide/>, in view of Catenary Systems, <http://www.catenary.com/howto/compare.html>.

With regard to claim 19, Bigjakkstaffa is relied upon for describing all of the limitations of parent claim 12, as discussed in the 102(a) rejection above. Bigjakkstaffa fails to explicitly describe writing to a three dimensional surface; performing an exclusive or operation; and determining uniformity, as recited in claim 19. However, official notice is hereby taken that writing to a three dimensional surface is notoriously well known in the art, and Catenary teaches performing an exclusive or operation and determining uniformity (see Catenary, page 1, wherein an XOR operation is performed on two images to determine their similarities or uniformity and differences).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstaffa to incorporate the XOR operations and uniformity determination of Catenary Systems, because XORing two images generated by the graphics stress test of Bigjakkstaffa allows one to determine when the frequency of the GPU is set too high, as, for example, when two 3D generated test images are determined to be non-uniform by a predetermined percentage.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bigjakkstaffa, <http://www.sysopt.com/articles/VCOGuide/>, in view of Fung, U.S. Publication No. US 2002/0062454 A1.

With regard to claim 20, Bigjakkstaffa is relied upon for describing all of the limitations of parent claim 12, as discussed in the 102(a) rejection above. Bigjakkstaffa fails to explicitly describe sensing on-chip temperature; and in response to detecting a threshold temperature during stress testing, selecting a clock rate to maintain a chip temperature at or below said threshold temperature, as recited in claim 20. However, Fung teaches all of the limitations of claim 20 (see Fung, paragraph [0118], wherein frequency control registers are loaded with values used to control the clock frequency at which a CPU core runs, and a CPU temperature sensor 204 is also coupled to CPU 201 and is operative to modify the values stored in the frequency control registers in response to a sense to CPU temperature so that CPU temperature is maintained within acceptable operating limits).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstaffa to incorporate the temperature sensing of Fung, because if the CPU temperature is not regulated as described in Fung, then the CPU or GPU could overheat and malfunction as a result of the user-initiated overclocking of Bigjakkstaffa if the user selects an overly-high overclocking frequency.

7. Claims 22-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Bigjakkstaffa, <http://www.sysopt.com/articles/VCOGuide/>, in view of Kao, U.S. Patent No. 6,622,254, and further in view of Gasior, <http://techreport.com/reviews/2002q3/ti4200s/index.x?pg=1>.

With regard to claim 22, Bigjakkstaffa teaches an overclocking control module for selecting and evaluating overclocking parameters (see Bigjakkstaffa, the overclocking menu tab on page 3, and see page 5, first paragraph, wherein the user requests overclocking by ticking the checkbox marked "Enable driver level hardware overclocking" near the top of the window of the overclocking control panel). Bigjakkstaffa fails to explicitly teach the remaining limitations of claim 22. However, Gasior teaches that the GeForce4 Ti 4200 graphics card of Bigjakkstaffa has a graphics pipeline (see Gasior, page 1, fourth paragraph); and Kao teaches said graphics system configured to automatically test overclocking parameters and determine maximum safe overclocking parameters in response to a user request (see the Abstract of Kao).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstaffa to incorporate the automatic overclocking

test of Kao, since a graphics pipeline decreases rendering time over the single GPU of Bigjakkstaffa, and an automatic optimization test allows for increased user productivity and requires less user knowledge to perform the optimization.

With regard to claim 23, Bigjakkstaffa teaches performing a stress test to evaluate errors generated by said graphics pipeline for each test set of overclocking parameters (see Bigjakkstaffa, the overclocking menu tab on page 3, and see page 5, first paragraph, wherein the user requests overclocking by ticking the checkbox marked "Enable driver level hardware overclocking" near the top of the window of the overclocking control panel, and see Bigjakkstaffa, pages 6 and 7, wherein the user clicks on the "test" button, and wherein further tests are performed by running a 3dmark bench, and if no visual artifacts or texture tearing appears, then the user defined GPU core and GPU clock speeds pass the test and are determined to be a safe set of overclocking parameters) Bigjakkstaffa fails to explicitly describe an overclocking control module performing the stress test, as required by claim 23. However, Kao teaches an overclocking control module for performing said stress test (see the Abstract of Kao, wherein the frequency generator is the overclocking control module which performs an automatic stress/optimization test to automatically overclock a processing unit).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstaffa to incorporate the automatic overclocking test and overclocking control module of Kao, since an overclocking control module

performing an automatic optimization test allows for increased user productivity and requires less user knowledge to perform the optimization.

With regard to claim 24, Bigjakkstaffa teaches wherein said graphics system includes computer executable instructions for running a control panel program for selecting and evaluating overclocking parameters (see Bigjakkstaffa, the overclocking menu tab on page 3, and see page 5, first paragraph, wherein the user requests overclocking by ticking the checkbox marked "Enable driver level hardware overclocking" near the top of the window of the overclocking control panel) and wherein said user inputs said request to said control panel (see Bigjakkstaffa, page 6, wherein the user adjusts at least one clock rate to form at least one new clock rate by dragging the core clock and memory clock sliders up in 10Mhz increments, and wherein the graphical user interface that the user is interacting with is inherently generated by computer executable instructions). Bigjakkstaffa fails to explicitly describe an overclocking control module, as required by claim 24. However, Kao teaches an overclocking control module (see the Abstract of Kao, wherein the frequency generator is the overclocking control module which performs an automatic stress/optimization test to automatically overclock a processing unit).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstaffa to incorporate the overclocking control module of Kao, since an overclocking control module performing an automatic optimization test allows for increased user productivity and requires less user knowledge to perform the optimization.

With regard to claim 25, the Bigjakkstaffa/Kao/Gasior combination teaches wherein said graphics system determines a maximum safe GPU clock rate (see the Abstract of Kao, and see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate of a GPU is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rate, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots, then the clock rate is no longer incremented, instead, the clock rate is decremented and selected by the user to the last stable clock rate which is the maximum safe GPU clock rate).

With regard to claim 26, the Bigjakkstaffa/Kao/Gasior combination teaches wherein said graphics system determines a maximum safe memory clock rate of a graphics memory associated with said GPU (see the Abstract of Kao, and see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate of the GPU memory is incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new memory clock rate, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots, then the memory clock rate is no longer incremented, instead, the memory clock rate is decremented and selected by the user to the last stable memory clock rate which is the maximum safe memory clock rate).

With regard to claim 27, the Bigjakkstaffa/Kao/Gasior combination wherein said graphics system determines a maximum safe GPU clock rate and a maximum safe

memory clock rate of a graphics memory associated with said GPU (see the Abstract of Kao, and see Bigjakkstaffa, page 8, last paragraph, wherein the clock rate of a GPU and the memory rate of the GPU are incrementally increased to form a new set of overclocking parameters, and a stress test in the form of games and benchmarks are performed at the new clock rates, and further wherein when the test exceeds a preselected number of errors, in this case at least one such as a graphical glitch or a showing of colored dots, then the GPU core and memory clock rates are no longer incremented, instead, the memory and GPU clock rates are decremented to the last stable clock rates which are the maximum safe GPU core clock rate and the maximum safe GPU memory clock rate).

8. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bigjakkstaffa, <http://www.sysopt.com/articles/VCOGuide/>, in view of Kao, U.S. Patent No. 6,622,254.

With regard to claim 28, Bigjakkstaffa teaches at least one function call instantiated in response to a control panel input to perform a stress test on each of a plurality of sets of overclocking parameters, each set of overclocking parameters including at least one element from the group consisting of a graphics processor core clock rate and a graphics memory clock rate (see Bigjakkstaffa, page 6, wherein the system tweaks control panel, specifically the overclocking tab, receives user input when the user drags the core clock and memory clock sliders to adjust at least one clock rate to form at least one new clock rate by dragging the GPU core clock and GPU memory

clock sliders up in 10Mhz increments, and wherein the functional call is inherently instantiated by the system tweaks control panel of Bigjakkstuffa, otherwise the control panel would fail to operate). Bigjakkstuffa fails to explicitly describe said software driver module selecting overclocking parameters passing said stress test, as further recited in claim 28. However, Kao teaches said software driver module selecting overclocking parameters passing said stress test (see Kao, col. 2, lines 18-34, specifically the frequency generators which use built-in parameters to automatically overclock a CPU of a computer system).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstuffa to incorporate a software driver module selecting overclocking parameters passing said stress test, since an automatic optimization test allows for increased user productivity and requires less user knowledge to perform the optimization.

With regard to claim 29, Bigjakkstuffa teaches a control panel for displaying overclocking parameters that include at least one of graphics processor core clock rate and a graphics memory clock ratesaid control panel instantiating a function call to said graphics system to test different overclocking parnmeters, set overclocking parameters, and return overclocking parameters to said control panel in response to a user selection (see Bigjakkstuffa, page 6, wherein the system tweaks control panel, specifically the overclocking tab, receives user input when the user drags the core clock and memory clock sliders to adjust at least one clock rate to form at least one new clock rate by dragging the GPU core clock and GPU memory clock sliders up in 10Mhz increments,

and wherein the functional call is inherently instantiated by the system tweaks control panel of Bigjakkstiffa, otherwise the control panel would fail to operate). Bigjakkstiffa fails to explicitly describe permitting a user to select an automatic overclocking mode, as also recited in claim 29. However, Kao teaches permitting a user to select an automatic overclocking mode (see the Abstract of Kao and col. 4, lines 19-22).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstiffa to incorporate the user selected automatic overclocking mode of Bigjakkstiffa, since the automatic overclocking mode allows for increased user productivity and requires less user knowledge to perform the optimization.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bigjakkstiffa, <http://www.sysopt.com/articles/VCOGuide/>, in view of Tran, U.S. Patent No. 6,567,868.

With regard to claim 21, Bigjakkstiffa is relied upon for teaching all of the limitations of parent claim 12, as discussed in the 102(a) rejection above. Bigjakkstiffa fails to explicitly describe for each new core processor clock rate, selecting a chip operating voltage. However, Tran teaches all of the limitations of claim 21 (see Tran, col. 1, generally lines 36-56, specifically, lines 54-56).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Bigjakkstiffa to incorporate the chip operating voltage

Art Unit: 2672

selection of Tran, in order to avoid chip overheating or malfunction at increased clock speeds.

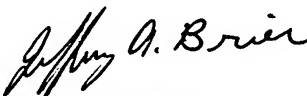
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Hadidi whose telephone number is 703-605-1187. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached at 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-308-6606.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JH


JEFFERY BRIER
PRIMARY EXAMINER

Application/Control Number: 10/690,918
Art Unit: 2672

Page 22